
Ch 2 Discrete-Time Signals and Systems

- 2.1 Generate and plot the complex exponential sequence $-3.6e^{(-0.5+j\pi/4)n}$ for $0 \leq n \leq 82$.
- 2.2 Write a MATLAB program to generate a sinusoidal sequence $x[n] = A \sin(\omega_0 n + \phi)$, and plot the sequence using **stem** function. The input data specified by the user are desired length L , amplitude A , the angular frequency ω_0 , and the phase ϕ where $0 < \omega_0 < \pi$ and $0 \leq \phi \leq 2\pi$.
- 2.3 Investigate the effect of signal smoothing by a moving-average filter of length 5, 7, and 9. Does the signal smoothing improve with an increase in the length? What is the effect of length on the delay between the smoothed output and the noisy input?